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Filed : December 3, 2003

REMARKS

In the Office Action, the examiner objected to the specification on the ground that the abstract of the disclosure contains legal phraseology. Accordingly, the applicant has amended the abstract to correct the informality.

The examiner rejected Claims 1-6 under 35 U.S.C. 103(a) as being unpatentable over Butler (U.S. Patent No. 4,262,532) in view of Bell (U.S. Patent No. 4,158,217). The examiner stated that Claims 7 to 15 are allowed. Accordingly, the applicant has amended Claim 1 to more clearly differentiate the features of the present invention from the technologies disclosed by the cited references. More specifically, the applicant has amended Claim 1 to incorporate some of the limitations in the original Claim 2, 3, and 4 in order to more distinctly depict the configuration under the present invention as a sensor to detect a circular location, i.e., an angle of a pressure point. The applicant has amended Claims 2-5 to be consistent with the amendment in Claim 1.

The present invention aims to provide a pressure point detector having a simple structure which is capable of detecting a location on a two dimensional surface such as a circular domain rather than on a straight line on which a pressure is applied. In particular, the present invention enables to detect an angle of a pressed point relative to a reference point or a reference line by the resistance film that forms a predetermined pattern of voltage distribution. This is because the voltage distribution is created by equipotential

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lines in radial directions from about the center of the resistance film, which establishes distribution of different voltages in the circular direction on the resistance film. One of the advantages of this structure over the prior art shown in the cited references is that complex calculation is not required to determine the angle (location) of a pressure point.

The cited Butler reference teaches a pressure sensor that can locate the position of a pressed point by arranging a resistance member (see Figure 1, 2, and 4) that is configured to be a liner strip (as in the case shown in Figure 1) or a spiral strip (as in the case shown in Figure 4) to make a determination of the pressed point. The resistance value and the pressed point on the surface must correspond to one another to obtain the angle of the pressed point. In the pressure sensor shown in the cited Butler reference, in order to obtain the angle of the pressed point, a complex calculation process or a corresponding data table is necessary because the voltage differences along the resistance member does not directly match the angle (location) of the pressed point.

In contrast, the configuration of the pressure point sensor under the present invention allows to obtain an angle of the pressured point by directly reading the voltage without involving complex calculations. This is because the voltage distribution on the resistance film between the two electrodes is such that the voltage value is proportional to the corresponding angle θ relative to one of the electrodes. Further, the present invention uses a

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resistance film rather than a strip, thereby making the determination of the angle of the pressed point much easier and simpler than that of conventional technology due to the fact that the electric potential is distributed in a circular manner on the resistance film.

Further, the cited Butler reference fails to show the pair of electrodes 3a and 3b radially arranged on the resistance film 15 as defined in the present invention. Although the cited Bell reference shows a pair of electrodes 7 and 9 (Figure 1 showing cross sectional view of a capacitive pressure transducer), what is actually disclosed by Bell is an invention that improves the linear characteristics of a capacitive pressure transducer. As is known in the art, a capacitive pressure transducer such as the one disclosed by the cited Bell reference changes the capacitance value as a function of pressure applied thereto. In other words, the cited Bell reference does not disclose a pressure point detector for detecting a location of a pressure point. Consequently, it is apparent that it is not possible for the capacitive pressure sensor of the cited Bell reference to detect a voltage as a function of circular location on the pressure sensor.

As discussed above, none of the cited references disclose the essential feature of the present invention. Therefore, the present invention is not obvious over the cited references taken singly or in combination. Accordingly, the rejection under 35 U.S.C. 103 (a) is no longer applicable to the present invention.

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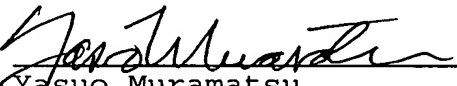
In this opportunity, the applicant has amended the specification to correct minor errors therein and to more clearly disclose the present invention. This is to verify that no new matter has been introduced by this amendment.

In view of the foregoing, the applicant believes that Claims 1-15 are in condition for allowance, and accordingly, the applicant respectfully requests that the present application be allowed and passed to issue.

Respectfully submitted,

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